

structures is made higher. That is, a specific unit comprising the structure of the film is made smaller and a film with minute structures is formed.

With the plasma display panel equipped with the protective film according to the present invention, effects of excellent sputter resistance and secondary emission characteristic can be produced. As a result, the operating life of the plasma display panel can be extended and the manufacturing cost can be reduced, and also the power consumption can be reduced.

WHAT IS CLAIMED IS:

1. A plasma display panel of AC type including a front panel provided with display electrodes and a rear panel provided with address electrodes, for displaying an image by causing discharge in the discharge gas space formed between the front and rear panels;

wherein the display panel is provided with a protective film made of metallic oxide covering the dielectric layer placed on the front panel;

wherein the protective film is formed into a structure where columnar structures are densely packed, closely with each other, extending perpendicularly to the interface between the dielectric layer and the protective film; and more than 400 columnar structures are formed per the

substrate area of $1 \mu\text{m}^2$

2. A plasma display panel according to Claim 1, wherein the number of the columnar structures formed per the substrate area of $1 \mu\text{m}^2$ is more than 500.

5 3. A plasma display panel according to Claim 1, wherein the columnar structures are formed into a series of crystal structures from the interface with the substrate to the film

10 4. A plasma display panel according to Claim 1, wherein the metallic oxide is magnesium oxide

5. A plasma display panel according to Claim 1, wherein the film thickness to be formed as the protective film is less than 300 nm

15 6. A plasma display panel according to Claim 1, wherein the film to be formed as the protective film is structured with one or more crystal axes, selected among a group of $\langle 111 \rangle$, $\langle 220 \rangle$, $\langle 100 \rangle$ and $\langle 311 \rangle$, along the normal on the substrate surface.